

Stage 1 Identify Desired Results

Establish Goals: (G)

Common Core State Standards

Content Area: Geometry/Algebra 1

Grade Level: High School

Domain: Similarity, Right Triangles, and Trigonometry

Standard: Define trigonometric ratios and solve problems involving right triangles.

Cluster: #8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.

What understandings are desired?

Students will understand that: (U)

- the Pythagorean Theorem is used to find the length of a third side of a right triangle in applied problems.
- the Pythagorean Theorem is used in everyday applications and situations.
- the Pythagorean Theorem was created by a mathematician in the 6th century for the purpose of construction.

What essential questions will be considered?

Essential Questions: (Q)

- Why is the formula used for finding the 3rd side of a right triangle?
- Where is the theorem being applied?
- Why did Pythagoras create the theorem?

What key knowledge and skills will students acquire as a result of this unit?

Students will know: (K)

- The Pythagorean Theorem formula
- Pertinent terminology such as hypotenuse, exponent, square root, area, perimeter, leg
- Important events and people consisting of Pythagoras, the creation of the Pythagorean Theorem, and events that assisted in the creation of the theorem.

Students will be able to: (S)

- demonstrate how to calculate the 3rd side of a right triangle
- illustrate how the Pythagorean Theorem is used to solve problems concerning right triangles
- apply the Pythagorean Theorem to real world applications
- analyze the life of Pythagoras and how the theorem was created
- consider how the theorem was derived and determine whether Pythagoras should be the only one credited
- recognize that the Pythagorean Theorem is used in

everyday life

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